
Description

On-net dialing

This section deals with the dialing required to reach a station which is located in the same network.

Flexible Numbering Plan allows the length of Location Codes (LOC) to vary from node to node. As well, the total number of digits dialed to get to a station can vary from station to station.

FNPN allows flexible length DNs throughout the network. For instance, the number of digits that make up a DN can vary from station to station. This capability allows existing networks to modify their dialing plan. An existing four digit network can go to five or six digit numbers when adding new switches, while keeping the existing four digit plan as is.

When Uniform Dialing Plan (UDP) is in effect, stations calling other stations on the same switch can skip the node identification digits. The on-net Location Codes can be one to seven digits in length, while the total number of digits dialed can be one to ten. To use UDP, a station user dials the Location Code of the desired node, then the DN of the station at that node. The digits dialed to get to a station can be the same from any switch in the network.

When Coordinated Dialing Plan (CDP) is used, stations on any switch are represented by unique three to ten digit numbers (since Release 13). A station on one switch can call a station at another switch within the CDP group by dialing the unique three to ten digit number without access codes and associated optional pauses for dial tone. With existing features, the number of digits dialed to a particular node (NCDP) must be the same for all stations on that node. If fewer digits than NCDP are dialed, the system times out and gives overflow tone. With Flexible Numbering Plan (FNP), any station on any switch is represented by a unique one digit to ten digits number. Moreover, DNs of different lengths can coexist on the same switch. Termination is attempted when the system times out, even if the expected number of digits is not dialed.

When the Transferable DN (TNDN) scheme is used, a user can move from one location to another while retaining their DN. The TNDN scheme is supported on a one to seven digit Coordinated Dialing Plan.

Off-net dialing

This section deals with the dialing required to reach a location which is not part of the local network, typically a public exchange station, but it also includes stations which are part of another private network.

FNP is used to accommodate dialing plans which are not based on a fixed length number of digits as the North American Numbering Plan (NANP) is. In North America the dialing plans are fixed length, NXX + XXXX or NPA + NXX + XXXX and ESN dialing plan formats are designed to respond to these consistent dialing patterns. Since this is not the case internationally, Flexible Numbering Plan (FNP) is introduced to allow users to dial numbers of varying lengths to terminate at a destination. Flexibility of the number of digits which can be dialed is achieved by using SPNs (Special Numbers) that utilize the Supplemental Digit restriction or Recognition (SDRR) capability.

ESN allowed a customer to dial off-network numbers. These numbers were recognized at a NARS or BARS switch and translation of the Numbering Plan Area (NPA), Office Code (NXX), or Special Number (SPN) with Supplemental Digit Restriction or Recognition (SDRR) determined the treatment for the call.

Supplemental Digit Restriction or Recognition (SDRR) is applied *after* translating the NPA, NXX, or SPN at an intelligent NARS or BARS switch.

Note: The use of the Alternate Routing Remote Number (ARRN) SDRR capability increases the maximum number of digits that can be analyzed for a SPN from 11 to 16.

Call Processing stops until the expected digits have been received. The expected digits are then compared to the numbers defined in the Supplemental Digit Restriction or Recognition Table:

- If a match is found and specified as a recognized DID or DDD number terminating at a Conventional Main switch (recognition takes place at the last intelligent NARS or BARS switch), Route Selection with the Route List Index defined for the NPA, NXX, or SPN number is performed. A special digit manipulation is applied so that the proper numbers are outpulsed to terminate directly at the station or attendant of the Conventional Main switch. If the trunk is any trunk type other than Tie, then the termination is processed by the current software with Digit Manipulation if necessary.
- Otherwise, the call is passed to Route Selection with the Route List Index associated with that NPA, NXX, or SPN number.

ESN did not allow alternate routing for these numbers. In countries not on the North American continent, this was a major drawback because it led to configuration problems for SPN numbers.

With FNP a new type of number is introduced in the SDRR block. It is called an Alternate Routing Remote Number (ARRN). Following each SPN (and only SPNs), a customer can configure ARRNs. For each of these numbers, it is also possible to configure an Alternate Route List Index.

Call processing follows the same steps as previously mentioned. The expected digits are compared to the numbers defined in the SDRR table and one of the following occurs:

- If a match is found and specified as a recognized ARRN number, Route Selection with the ARLI defined for that number is performed.
- If a match is not found, Route Selection is called with the Route List Index found in the table. (One RLI per SPN number).